GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: January 19, 2005, 16:37:04 ; Search time 80 Seconds
(without alignments)
1542.536 Million cell updates/sec

Title: US-09-913-772-2
Perfect score: 1823
Sequence: 1 MKAIFVLNAAPKDNTWYAGG.....DRRVEIEVKGYKEVVTQPAG 344

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2002273 seqs, 358729299 residues

Total number of hits satisfying chosen parameters: 2002273

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_23Sep04:*
1: geneseqp1980s:*
2: geneseqp1990s:*
3: geneseqp2000s:*
4: geneseqp2001s:*
5: geneseqp2002s:*
6: geneseqp2003as:*
7: geneseqp2003bs:*
8: geneseqp2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	1823	100.0	344	3	AAB18994	Aab18994 A P40 pol
2	1823	100.0	344	3	AAB08317	Aab08317 An outer
3	1823	100.0	344	3	AAY93341	Aay93341 Amino aci
4	1823	100.0	344	3	AAB08825	Aab08825 A P40 pol
5	1823	100.0	344	3	AAB18804	Aab18804 A Klebsie
6	1823	100.0	344	3	AAB08341	Aab08341 An outer
7	1823	100.0	344	4	AAG63698	Aag63698 Amino aci
8	1823	100.0	344	4	AAB67770	Aab67770 Amino aci
9	1823	100.0	344	5	AAM48395	Aam48395 Klebsiell
10	1823	100.0	344	5	AAM47796	Aam47796 Klebsiell
11	1823	100.0	344	8	ADI00532	Adi00532 Klebsiell
12	1823	100.0	344	8	ADI56807	Adi56807 K. pneumo
13	1823	100.0	344	8	ADI38366	Adi38366 K. pneumo
14	1818	99.7	344	2	AAR93797	Aar93797 Protein L
15	1818	99.7	452	4	AAB67771	Aab67771 Amino aci
16	1813	99.5	344	2	AAY44077	Aay44077 K.pneumon
17	1813	99.5	344	4	AAG67743	Aag67743 Amino aci
18	1813	99.5	344	4	AAB84122	Aab84122 Amino aci
19	1782	97.8	385	7	ABO60934	Abo60934 Klebsiell
20	1781	97.7	335	2	AAR88257	Aar88257 K.pneumon
21	1781	97.7	335	2	AAR95644	Aar95644 Klebsiell
22	1781	97.7	335	2	AAR93796	Aar93796 Protein P
23	1289	70.7	369	6	ABM69278	Abm69278 Photorhab
24	1279	70.2	384	7	ADF07637	Adf07637 Bacterial
25	1026	56.3	188	2	AAR93798	Aar93798 Protein L
26	984	54.0	179	2	AAR95645	Aar95645 Klebsiell
27	689	37.8	344	5	AAM50724	Aam50724 Haemophil
28	688	37.7	344	5	AAM50721	Aam50721 Haemophil
29	687	37.7	137	5	ABB83156	Abb83156 Partial O
30	687	37.7	153	5	AAE17872	Aae17872 Sequence
31	685	37.6	344	5	AAM50718	Aam50718 Haemophil
32	684	37.5	344	5	AAM50719	Aam50719 Haemophil
33	684	37.5	344	5	AAM50717	Aam50717 Haemophil
34	684	37.5	344	5	AAM50716	Aam50716 Haemophil
35	684	37.5	344	5	AAM50722	Aam50722 Haemophil
36	683	37.5	344	5	AAM50725	Aam50725 Haemophil
37	680.5	37.3	341	5	AAM50720	Aam50720 Haemophil
38	680.5	37.3	341	5	AAM50723	Aam50723 Haemophil
39	680.5	37.3	341	5	AAM50726	Aam50726 Haemophil
40	678	37.2	344	5	AAM50727	Aam50727 Haemophil
41	671	36.8	364	3	AAB44588	Aab44588 Virulence
42	671	36.8	364	5	ABP54540	Abp54540 Actinobac
43	667	36.6	364	3	AAY97899	Aay97899 Actinobac
44	667	36.6	364	3	AAY96097	Aay96097 Actinobac
45	655.5	36.0	359	2	AAR66294	Aar66294 Non-typab

ALIGNMENTS

RESULT 1
AAB18994
ID AAB18994 standard; protein; 344 AA.
XX
AC AAB18994;
XX
DT 08-FEB-2001 (first entry)
XX
DE A P40 polypeptide of Klebsiella pneumoniae.
XX
KW P40; membrane fraction; Gram-negative bacteria; anticancer;
KW immune response; mononuclear blood cell; tumour necrosis factor-alpha;
KW interleukin-12; antitumour; cancer.
XX
OS Klebsiella pneumoniae.
XX
PN WO200054790-A1.
XX
PD 21-SEP-2000.
XX
PF 15-MAR-2000; 2000WO-FR000623.
XX
PR 15-MAR-1999; 99FR-00003154.
XX
PA (FABR) FABRE MEDICAMENT SA PIERRE.
XX
PI Libon C, Corvaia N, Beck A, Bonnefoy J;
XX
DR WPI; 2000-587477/55.
DR N-PSDB; AAA96568.
XX
PT Use of membrane fractions from Gram-negative bacteria as immunostimulants
PT for the treatment or prevention of cancer, increases effect of e.g.
PT chemotherapeutic agents.
XX
PS Claim 6; Page 27-28; 34pp; French.
XX
CC The present sequence represents a P40 polypeptide of Klebsiella
CC pneumoniae. The protein is found in the membrane fraction, and is used in
CC the method of the invention. The specification describes the use of a
CC membrane fraction from Gram-negative bacteria for the preparation of an
CC immunostimulating composition that can induce an anticancer immune
CC response. The membrane fraction not only stimulates proliferation of
CC human mononuclear blood cells (immunostimulation) but also induces
CC production of tumour necrosis factor-alpha and interleukin (IL)-12, which
CC are known to have antitumour activity, so that it improves the effects of
CC other co-administered anticancer treatments (chemotherapy or radiation).
CC The membrane fraction is used for treatment and prevention of cancer

CC (particularly of the bladder, prostate, colon or liver) and also
CC malignant melanomas
XX
SQ Sequence 344 AA;

Query Match 100.0%; Score 1823; DB 3; Length 344;
Best Local Similarity 100.0%; Pred. No. 1.1e-157;
Matches 344; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60

Qy         61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120

Qy        121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180

Qy        181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240

Qy        241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300

Qy        301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
              |||||||||||||||||||||||||||||||||||||||||||
Db        301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
```

RESULT 2
AAB08317
ID AAB08317 standard; protein; 344 AA.
XX
AC AAB08317;
XX
DT 04-DEC-2000 (first entry)
XX
DE An outer membrane protein A (OmpA), designated P40.
XX
KW Outer membrane protein A; OmpA; P40; cytotoxic T cell response;
KW CTL response; tumour cell; vaccine; infection; tumour; melanoma;
KW genetic vaccine.
XX
OS Klebsiella pneumoniae.
XX
PN WO200048628-A1.
XX
PD 24-AUG-2000.
XX
PF 17-FEB-2000; 2000WO-FR000393.
XX
PR 17-FEB-1999; 99FR-00001917.
XX
PA (FABR) FABRE MEDICAMENT SA PIERRE.
XX
PI Renno T, Bonnefoy J;
XX
DR WPI; 2000-543667/49.
DR N-PSDB; AAA63917.
XX
PT Use of enterobacterial outer membrane protein A in vaccines for inducing
PT cytotoxic T cell responses, useful for treating or preventing infections
PT and tumors.
XX
PS Claim 7; Page 38-39; 45pp; French.
XX
CC The present sequence represents a Klebsiella pneumoniae outer membrane
CC protein A (OmpA), designated P40. The enterobacterial OmpA polypeptide,
CC or its fragments, is used for preparing a composition that induces, or
CC increases, the cytotoxic T cell (CTL) response against an infectious
CC agent or tumour cell. Compositions containing OmpA, optionally mixed with
CC or coupled to a suitable antigen or hapten, are used as vaccines for
CC treatment or prevention of infections caused by viruses, bacteria, fungi
CC and parasites or tumors, particularly where associated with an antigen
CC and specifically melanoma. Nucleic acids that encode OmpA (or its fusion
CC with antigens or haptens) are useful as genetic vaccines again for
CC treating infections and tumors
XX
SQ Sequence 344 AA;

Query Match 100.0%; Score 1823; DB 3; Length 344;
Best Local Similarity 100.0%; Pred. No. 1.1e-157;
Matches 344; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60

Qy         61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120

Qy        121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180

Qy        181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240

Qy        241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300

Qy        301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
              |||||||||||||||||||||||||||||||||||||||||||
Db        301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
```

RESULT 3
AAY93341
ID AAY93341 standard; protein; 344 AA.
XX
AC AAY93341;
XX
DT 04-SEP-2000 (first entry)
XX
DE Amino acid sequence of a Klebsiella P40 protein.
XX
KW P40 protein; outer membrane protein A; OmpA; antigen-presenting cell;
KW dendritic cell; antigen delivery; immune response; cancer;
KW tumour-associated antigen; autoimmune disease; allergy; graft rejection;
KW cardiovascular disease; central nervous system disease; inflammation;
KW infection; immune deficiency.
XX
OS Klebsiella pneumoniae.
XX
PN WO200027432-A1.
XX
PD 18-MAY-2000.
XX
PF 08-NOV-1999; 99WO-FR002734.
XX
PR 06-NOV-1998; 98FR-00014007.
XX
PA (FABR) FABRE MEDICAMENT SA PIERRE.
XX
PI Bonnefoy J, Lecoanet S, Aubry J, Jeannin P, Baussant T;
XX
DR WPI; 2000-387342/33.
DR N-PSDB; AAA15498.

XX
PT Use of enterobacterial outer membrane protein A for delivering active
PT substances, particularly immunogens for treating or preventing e.g.
PT cancer, to antigen presenting cells.
XX
PS Claim 9; Page 28-29; 35pp; French.
XX
CC The present sequence represents a P40 protein. The protein is an outer
CC membrane protein A (OmpA). The protein is used in pharmaceutical
CC compositions for specific targeting of an active substance to antigen-
CC presenting cells (APCs), especially dendritic cells. OmpA binds
CC specifically to APCs and is internalised by them (in contrast to other
CC protein carriers such as tetanus toxoid). The OmpA protein is used to
CC deliver an antigen or hapten to modify (specifically to improve) an
CC immune response, especially for treatment or prevention of cancers
CC (particularly those that express a associated-associated antigen),
CC autoimmune disease, allergy, graft rejection, cardiovascular or central
CC nervous system diseases, inflammation, infection or immune deficiency
XX
SQ Sequence 344 AA;

Query Match 100.0%; Score 1823; DB 3; Length 344;
Best Local Similarity 100.0%; Pred. No. 1.1e-157;
Matches 344; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60
Db 1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60

Qy 61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120
Db 61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120

Qy 121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180
Db 121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180

Qy 181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240
Db 181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240

Qy 241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300
Db 241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300

Qy 301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
Db 301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344

RESULT 4
AAB08825
ID AAB08825 standard; protein; 344 AA.
XX
AC AAB08825;
XX
DT 02-JAN-2001 (first entry)
XX
DE A P40 polypeptide (an outer membrane protein A (OmpA)).
XX
KW P40; outer membrane protein A; OmpA; immunogen; cytokine; growth factor;
KW hormone; tumour-specific marker; vaccine; cancer; contraceptive.
XX
OS Klebsiella pneumoniae.
XX
PN FR2789902-A1.
XX
PD 25-AUG-2000.
XX
PF 24-FEB-1999; 99FR-00002314.
XX
PR 24-FEB-1999; 99FR-00002314.
XX
PA (FABR) FABRE MEDICAMENT SA PIERRE.
XX
PI Goetsch L, Corvaia N, Beck A, Haeuw JF, Bonnefoy JY;
XX
DR WPI; 2000-573921/54.
DR N-PSDB; AAA75036.
XX
PT Use of enterobacterial outer membrane protein as immunogenic carrier,
PT particularly for contraceptive and anti-cancer vaccines, provides strong
PT humoral response.
XX
PS Claim 5; Page 23-24; 34pp; French.
XX
CC The present sequence represents a P40 polypeptide of Klebsiella
CC pneumoniae. P40 is an enterobacterial outer membrane protein A (OmpA). It
CC can be associated an immunogen, and used to prepare a pharmaceutical
CC composition for improving the immunological response to the immunogen.
CC The immunogen is selected from cytokines, growth factors or hormones (or
CC their receptors) and/or tumour-specific markers. Compositions containing
CC OmpA induce a strong and specific antibody response. The compositions of
CC the invention are especially useful in vaccines to prevent or treat
CC cancer or as contraceptives
XX
SQ Sequence 344 AA;

Query Match 100.0%; Score 1823; DB 3; Length 344;
Best Local Similarity 100.0%; Pred. No. 1.1e-157;
Matches 344; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60
Db 1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60

Qy 61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120
Db 61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120

Qy 121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180
Db 121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180

Qy 181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240
Db 181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240

Qy 241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300
Db 241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300

Qy 301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
Db 301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344

RESULT 5
AAB18804
ID AAB18804 standard; protein; 344 AA.
XX
AC AAB18804;
XX
DT 22-JAN-2001 (first entry)
XX
DE A Klebsiella pneumoniae P40 polypeptide.
XX
KW P40 polypeptide; membrane fraction; antigen; hapten; immune response;
KW infectious disease; cancer; paramyxoviruse infection;
KW respiratory syncytial virus; parainfluenza.
XX
OS Klebsiella pneumoniae.
XX
PN WO200054789-A1.
XX
PD 21-SEP-2000.

XX
PF 15-MAR-2000; 2000WO-FR000622.
XX
PR 15-MAR-1999; 99FR-00003153.
XX
PA (FABR) FABRE MEDICAMENT SA PIERRE.
XX
PI Libon C, Corvaia N, N'guyen TN, Beck A, Bonnefoy J;
XX
DR WPI; 2000-587476/55.
DR N-PSDB; AAA75881.
XX
PT Use of Klebsiella membrane fraction as adjuvant, for e.g. antitumor or
PT antiviral vaccines, to direct a Th1, or mixed, immune response against
PT associated antigen.
XX
[redacted] Disclosure; Page 28-29; 36pp; French.
XX
CC The present sequence represents a Klebsiella pneumoniae P40 polypeptide.
CC The protein is isolated from a membrane fraction. The specification
CC describes the use of a membrane fraction from Klebsiella pneumoniae,
CC associated with an antigen or hapten, for preparation of a pharmaceutical
CC composition that directs a Th1, or mixed Th1/Th2 immune response. The
CC composition is used for treatment or prevention of infectious diseases
CC (viral, bacterial, fungal or parasitic) or cancers, most especially
CC infections by paramyxoviruses, specifically respiratory syncytial virus
CC or parainfluenza
XX
SQ Sequence 344 AA;

Query Match 100.0%; Score 1823; DB 3; Length 344;
Best Local Similarity 100.0%; Pred. No. 1.1e-157;
Matches 344; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60
Db 1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60

Qy 61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120
Db 61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120

Qy 121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180
[redacted] 121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180

Qy 181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240
Db 181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240

Qy 241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300
Db 241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300

Qy 301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
Db 301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344

RESULT 6
AAB08341
ID AAB08341 standard; protein; 344 AA.
XX
AC AAB08341;
XX
DT 04-DEC-2000 (first entry)
XX
DE An outer membrane protein A (OmpA), designated P40.
XX
KW Outer membrane protein A; OmpA; P40; cytotoxic T cell response; tumour;
KW CTL response; tumour cell; vaccine; melanoma; genetic vaccine.
XX
OS Klebsiella pneumoniae.

XX
PN WO200048629-A1.
XX
PD 24-AUG-2000.
XX
PF 17-FEB-2000; 2000WO-FR000394.
XX
PR 17-FEB-1999; 99FR-00001917.
XX
PA (FABR) FABRE MEDICAMENT SA PIERRE.
XX
PI Renno T, Romero P, Miconnet I, Carottini J, Bonnefoy J;
XX
DR WPI; 2000-549238/50.
DR N-PSDB; AAA63956.
XX
PT Use of enterobacterial outer membrane protein A in vaccines, used to
PT treat or prevent melanoma, includes melanoma-specific peptide and induces
PT cytotoxic lymphocyte response.
XX
PS Claim 6; Page 30-31; 35pp; French.
XX
CC The present sequence represents a Klebsiella pneumoniae outer membrane
CC protein A (OmpA), designated P40. The enterobacterial OmpA polypeptide,
CC or its fragments, is used for preparing a composition that induces, or
CC increases, the cytotoxic T cell (CTL) response against tumour cells.
CC Compositions containing OmpA, optionally mixed with or coupled to a
CC suitable antigen or hapten, are used as vaccines for treatment or
CC prevention of tumors, particularly where associated with an antigen and
CC specifically melanoma. Nucleic acids that encode OmpA (or its fusion with
CC antigens or haptens) are useful as genetic vaccines again for treating
CC tumors
XX
SQ Sequence 344 AA;

Query Match 100.0%; Score 1823; DB 3; Length 344;
Best Local Similarity 100.0%; Pred. No. 1.1e-157;
Matches 344; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60
Db 1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60

Qy 61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120
Db 61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120

Qy 121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180
Db 121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180

Qy 181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240
Db 181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240

Qy 241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300
Db 241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300

Qy 301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
Db 301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344

RESULT 7
AAG63698
ID AAG63698 standard; protein; 344 AA.
XX
AC AAG63698;
XX
DT 29-OCT-2001 (first entry)
XX
DE Amino acid sequence of an outer membrane protein A, P40.

XX
KW Outer membrane protein A; P40; antigen presenting cell; vaccine;
KW antiviral; antibacterial; anticancer; autoimmune disease; inflammation;
KW graft rejection; cardiovascular disease; immune deficiency.
XX
OS Klebsiella pneumoniae.
XX
PN FR2803302-A1.
XX
PD 06-JUL-2001.
XX
PF 04-JAN-2000; 2000FR-00000070.
XX
PR 04-JAN-2000; 2000FR-00000070.
XX
PA (FABR) FABRE MEDICAMENT SA PIERRE.
XX
PI Baussant T, Jeannin P, Delneste Y, Lawny F, Bonnefoy JY;
XX
DR WPI; 2001-427232/46.
DR N-PSDB; AAH74731.
XX
[redacted] Preparing purified polypeptide soluble in absence of detergent, useful
[redacted] for modulating the immune system, e.g. in vaccines, by removal of
[redacted] detergent, denaturing and molecular sieving.
XX
PS Claim 9; Page 24-25; 34pp; French.
XX
CC The present sequence represents an outer membrane protein A (P40) of
CC Klebsiella pneumoniae. The protein is soluble in aqueous solvent in
CC absence of detergent. The specification describes a method for the
CC preparation of this polypeptide. The P40 protein binds selectively to
CC antigen-presenting cell, so provides targeting, proliferation and/or
CC expression of molecules by these cells. P40 is used, alone or as an
CC adjuvant, to produce therapeutic compositions that are soluble in absence
CC of detergent, especially when formulated with an antigen or hapten for
CC modulating the host's immune system. Especially, it is used to prepare
CC vaccines, especially antiviral, antibacterial or anticancer (e.g. against
CC human immune deficiency virus, respiratory syncytial virus, measles,
CC mumps, tuberculosis etc.), but also against fungi, parasites, autoimmune
CC diseases, graft rejection, cardiovascular disease, inflammation and
CC immune deficiency
XX
SQ Sequence 344 AA;

Query Match 100.0%; Score 1823; DB 4; Length 344;
Best Local Similarity 100.0%; Pred. No. 1.1e-157;
Matches 344; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60

Qy         61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120

Qy        121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180

Qy        181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240

Qy        241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300

Qy        301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
              |||||||||||||||||||||||||||||||||||||||||||
Db        301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
```

RESULT 8
AAB67770
ID AAB67770 standard; protein; 344 AA.
XX
AC AAB67770;
XX
DT 11-JUN-2001 (first entry)
XX
DE Amino acid sequence of an outer membrane protein A (OmpA) P40.
XX
KW Outer membrane protein A; OmpA; P40; enterobacteria; nasal composition;
KW respiratory syncytial virus; RSV; RSV infection; lung; respiratory tract;
KW vaccine.
XX
OS Klebsiella pneumoniae.
XX
PN WO200121203-A1.
XX
PD 29-MAR-2001.
XX
PF 22-SEP-2000; 2000WO-FR002626.
XX
PR 23-SEP-1999; 99FR-00011888.
XX
PA (FABR) FABRE MEDICAMENT SA PIERRE.
XX
PI Corvaiea N, Goestch L;
XX
DR WPI; 2001-257929/26.
DR N-PSDB; AAF80152.
XX
PT Vaccine against respiratory syncytial virus, comprises enterobacterial
PT outer membrane protein and viral immunogen, provides protective response
PT throughout the respiratory tract.
XX
PS Claim 3; Page 28-29; 39pp; French.
XX
CC The present sequence represents an outer membrane protein A (OmpA),
CC designated P40. Enterobacterium OmpA proteins, associated with an
CC immunogenic peptide from respiratory syncytial virus (RSV), are used to
CC prepare a nasal composition that induces a protective response, against
CC RSV infection in the upper and lower (lung) respiratory tract. OmpA
CC potentiates the immune response to some immunogenic peptides, eliminating
CC the need for adjuvants. The method is useful for producing vaccines for
CC prevention or treatment of RSV infections
XX
SQ Sequence 344 AA;

Query Match 100.0%; Score 1823; DB 4; Length 344;
Best Local Similarity 100.0%; Pred. No. 1.1e-157;
Matches 344; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60

Qy         61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120

Qy        121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180

Qy        181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240

Qy        241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300
```

```
Qy        301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
              ||||||||||||||||||||||||||||||||||||||||||||
Db        301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
```

RESULT 9
AAM48395
ID AAM48395 standard; protein; 344 AA.
XX
AC AAM48395;
XX
DT 10-MAY-2002 (first entry)
XX
DE Klebsiella pneumoniae outer membrane protein, OmpA.
XX
KW OmpA; outer membrane protein; cytostatic; cancer; tumour antigen.
XX
OS Klebsiella pneumoniae.
XX
PN WO200182959-A1.
XX
PD 08-NOV-2001.
XX
PF 03-MAY-2001; 2001WO-FR001348.
XX
PR 04-MAY-2000; 2000FR-00005702.
XX
PA (FABR) FABRE MEDICAMENT SA PIERRE.
XX
PI Renno T, Invernizzi I, Bonnefoy J;
XX
DR WPI; 2002-066490/09.
XX
PT Composition, useful for treatment and prevention of cancer, also for
PT detecting tumor antigens, comprises an outer membrane protein and tumor
PT lysate.
XX
PS Claim 5; Page 25-26; 32pp; French.
XX
CC The present invention relates to a pharmaceutical composition, comprising
CC an Outer Membrane Protein (e.g. OmpA), associated with a lysate of
CC autologous and/or heterologous tumour cells. The present sequence is one
CC such OmpA from Klebsiella pneumoniae. The composition is useful for the
CC treatment of cancers, particularly where associated with tumour antigens,
CC and for detecting tumour antigens
XX
SQ Sequence 344 AA;

```
  Query Match             100.0%;  Score 1823;  DB 5;  Length 344;
  Best Local Similarity   100.0%;  Pred. No. 1.1e-157;
  Matches  344;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60

Qy         61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120

Qy        121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180

Qy        181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240

Qy        241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300

Qy        301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
              ||||||||||||||||||||||||||||||||||||||||||||
Db        301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
```

RESULT 10
AAM47796
ID AAM47796 standard; protein; 344 AA.
XX
AC AAM47796;
XX
DT 01-MAR-2002 (first entry)
XX
DE Klebsiella pneumoniae OmpA protein.
XX
KW OmpA; enterobacterium; antibacterial; antifungal; antiviral;
KW antiparasitic; antimicrobial; infection.
XX
OS Klebsiella pneumoniae.
XX
PN WO200187326-A1.
XX
PD 22-NOV-2001.
XX
PF 16-MAY-2001; 2001WO-FR001490.
XX
PR 16-MAY-2000; 2000FR-00006199.
XX
PA (FABR) FABRE MEDICAMENT SA PIERRE.
XX
PI Jeannin P, Delneste Y, Baussant T;
XX
DR WPI; 2002-055641/07.
XX
PT Use of an enterobacterium OmpA protein for prophylactic and therapeutic
PT treatment of viral, bacterial, fungal and parasitic infections.
XX
PS Claim 8; Page 24-25; 33pp; French.
XX
CC The present sequence is OmpA protein from enterobacteria Klebsiella
CC pneumoniae. OmpA protein can be used to prepare an antimicrobial
CC pharmaceutical composition for mucosal delivery. The composition can be
CC used for prophylactic and therapeutic treatment of viral, bacterial,
CC fungal and parasitic infections
XX
SQ Sequence 344 AA;

```
  Query Match             100.0%;  Score 1823;  DB 5;  Length 344;
  Best Local Similarity   100.0%;  Pred. No. 1.1e-157;
  Matches  344;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60

Qy         61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120

Qy        121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180

Qy        181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240

Qy        241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300

Qy        301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
              ||||||||||||||||||||||||||||||||||||||||||||
Db        301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
```

RESULT 11
ADI00532
ID ADI00532 standard; protein; 344 AA.
XX
AC ADI00532;
XX
DT 15-APR-2004 (first entry)
XX
DE Klebsiella pneumoniae OmpA P40 protein.
XX
KW solubility; virucide; antibacterial; parasiticide; fungicide; cytostatic;
KW vaccine; viral; bacterial; parasitic; fungal infection; cancer;
KW gene therapy; cosmetic; major histocompatibility complex; MHC;
KW cytotoxic T lymphocyte; CTL; OmpA; P40.
XX
OS Klebsiella pneumoniae.
XX
PN FR2842812-A1.
XX
PD 30-JAN-2004.
XX
PF 26-JUL-2002; 2002FR-00009526.
XX
PR 26-JUL-2002; 2002FR-00009526.
XX
PA (FABR) FABRE MEDICAMENT SA PIERRE.
XX
PI Beck A, Corvaia N, Klinguer HC, Goetsch L;
XX
DR WPI; 2004-135597/14.
XX
PT Solubilizing hydrophobic peptides, useful e.g. in vaccines against
PT infectious microbes or tumors, by attachment of at least three lysine
PT residues.
XX
PS Disclosure; SEQ ID NO 72; 65pp; French.
XX
CC The invention relates to a novel method for solubilising, or improving
CC the solubility of, a peptide in aqueous medium comprising covalent
CC attachment of at least 3 residues of Lys, in L or D form, distributed
CC over the N and/or C termini in the form of a linear or branched chain.
CC The invention has virucide, antibacterial, parasiticide, fungicide and
CC cytostatic activities and may be used to generate prophylactic or
CC therapeutic vaccines or compositions for control of viral, bacterial,
CC parasitic or fungal infections or cancers, as well as during gene therapy
CC procedures. The peptides of the invention may also be used in cosmetic
CC compositions. The current sequence is that of the Klebsiella pneumoniae
CC OmpA P40 protein of the invention.
XX
SQ Sequence 344 AA;

Query Match 100.0%; Score 1823; DB 8; Length 344;
Best Local Similarity 100.0%; Pred. No. 1.1e-157;
Matches 344; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60

Qy         61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120

Qy        121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180

Qy        181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240

Qy        241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300

Qy        301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
              |||||||||||||||||||||||||||||||||||||||||||
Db        301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
```

RESULT 12
ADI56807
ID ADI56807 standard; protein; 344 AA.
XX
AC ADI56807;
XX
DT 22-APR-2004 (first entry)
XX
DE K. pneumoniae p40 amino acid sequence, seq id 72.
XX
KW Vaccine; gene therapy; solubility; MHC ligand;
KW major histocompatibility complex; hydrophobic epitope;
KW microbial pathogen; tumour; melanoma; Melan/Mart-1; 4R-ELA; viral;
KW bacterial; parasitic; fungal; infection; cancer; p40.
XX
OS Klebsiella pneumoniae.
XX
PN FR2842811-A1.
XX
PD 30-JAN-2004.
XX
PF 26-JUL-2002; 2002FR-00009522.
XX
PR 26-JUL-2002; 2002FR-00009522.
XX
PA (FABR) FABRE MEDICAMENT SA PIERRE.
XX
PI Beck A, Corvaia N, Klinguer HC, Goetsch L;
XX
DR WPI; 2004-135596/14.
XX
PT Solubilizing hydrophobic peptides, useful e.g. in vaccines against
PT infectious microbes or tumors, by attachment of at least three arginine
PT or lysine residues.
XX
PS Disclosure; SEQ ID NO 72; 70pp; French.
XX
CC The invention relates to a method for solubilising, or improving the
CC solubility of a peptide (I) in aqueous medium, comprising covalent
CC attachment of at least 3 residues of Arg and/or Lys, provided at least
CC one is Arg, in the L or D form, distributed over the N and/or C termini
CC in the form of a linear or branched chain. Also disclosed are peptide
CC ligands (Ia) of MHC (major histocompatibility complex) modified in the
CC manner described above, and a vaccine containing at least one peptide
CC that contains at least one hydrophobic epitope derived from an antigenic
CC protein of a microbial pathogen or tumour that is modified by the new
CC method or is (Ia). Four peptides, unmodified, are specifically claimed,
CC e.g. the melanoma Melan/Mart-1 peptide (4R-ELA). Solubilised peptides of
CC the invention, where derived from peptides that include at least one
CC hydrophobic epitope from a microbial pathogen or from a tumour-associated
CC protein, are used in prophylactic or therapeutic vaccines or compositions
CC for control of viral, bacterial, parasitic or fungal infections or
CC cancers. Nucleic acids that encode the solubilised (I) can be used
CC similarly. The solubilised peptide can also be used in cosmetic
CC compositions. The current sequence represents the K. pneumoniae p40 amino
CC acid sequence.
XX
SQ Sequence 344 AA;

Query Match 100.0%; Score 1823; DB 8; Length 344;
Best Local Similarity 100.0%; Pred. No. 1.1e-157;
Matches 344; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60
```

```
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60

Qy         61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120

Qy        121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180

Qy        181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240

Qy        241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300

Qy        301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
                |||||||||||||||||||||||||||||||||||||||||||
Db        301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
```

RESULT 13
ADI38366
ID ADI38366 standard; protein; 344 AA.
XX
AC ADI38366;
XX
DT 22-APR-2004 (first entry)
XX
DE K. pneumoniae OmpA P40, seq id 2.
XX
KW Cytostatic; vaccine; beta-hCG; human chorionic gonadotropin; beta-chain;
KW cytotoxic T lymphocyte; CTL; cancer; OmpA; P40.
XX
OS Homo sapiens.
XX
PN FR2839452-A1.
XX
PD 14-NOV-2003.
XX
PF 07-MAY-2002; 2002FR-00005691.
XX
PR 07-MAY-2002; 2002FR-00005691.
XX
PA (FABR) FABRE MEDICAMENT SA PIERRE.
XX
PI Goetsch L, Aubry JP, Klinguer HC, Corvaia N, Beck A;
XX
DR WPI; 2004-001390/01.
XX
PT New peptides from human chorionic gonadotropin, useful for treatment or
PT prevention of cancer, induce a cytotoxic T cell response.
XX
PS Claim 9; SEQ ID NO 2; 86pp; French.
XX
CC The invention relates to the use of a peptide (I), encoded by a genomic
CC fragment of the gene for beta-hCG (human chorionic gonadotropin, beta-
CC chain), or one of its analogs, to prepare a pharmaceutical composition
CC for generating cytotoxic T lymphocytes (CTL). Peptides of the invention
CC associate with MHC Class I molecules to generate (I)-specific CTC,
CC causing expression of gamma-interferon and tumour necrosis factoralpha,
CC directed against hCG+ tumour cells. Peptides of the invention and nucleic
CC acids that encodes them, are used, particularly as vaccine, for treatment
CC or prevention of cancers that are positive for the hCG marker. The
CC current sequence represents the K. pneumoniae OmpA P40 amino acid
CC sequence.
XX
SQ Sequence 344 AA;

  Query Match 100.0%; Score 1823; DB 8; Length 344;
  Best Local Similarity 100.0%; Pred. No. 1.1e-157;
  Matches 344; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60

Qy         61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120

Qy        121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180

Qy        181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240

Qy        241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300

Qy        301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
                |||||||||||||||||||||||||||||||||||||||||||
Db        301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
```

RESULT 14
AAR93797
ID AAR93797 standard; protein; 344 AA.
XX
AC AAR93797;
XX
DT 16-SEP-1998 (first entry)
XX
DE Protein LP40, a variant of OmpA protein P40 from K. pneumoniae I-145.
XX
KW Outer membrane protein; OmpA; P40; immunocomplex; oligosaccharide;
KW polysaccharide; vaccine; Salmonella.
XX
OS Synthetic.
OS Klebsiella pneumoniae.
XX
PN WO9741888-A1.
XX
PD 13-NOV-1997.
XX
PF 06-MAY-1997; 97WO-FR000800.
XX
PR 07-MAY-1996; 96FR-00005692.
XX
PA (FABR) FABRE MEDICAMENT SA PIERRE.
XX
PI Binz H, Haeuw J, Svenson S;
XX
DR WPI; 1997-558694/51.
DR N-PSDB; AAV13868.
XX
PT Immunogenic complex for use in anti-bacterial vaccine - comprises
PT bacterial oligo; or poly:saccharide coupled to a Gram-negative bacterial
PT outer membrane protein or a Streptococcal HSA binding protein.
XX
PS Claim 11,12,20; Page 38-39; 63pp; French.
XX
CC The patent discloses a new immunogenic complex which consists of (1) an
CC oligo- or polysaccharide found naturally on bacteria, coupled to (2) a
CC carrier protein chosen from (a) the human serum albumin binding protein
CC of Streptococcus, (b) Gram-negative bacterial outer membrane proteins
CC (Omp), or (c) fragments of these proteins. The immunogenic complex is
CC useful in a vaccines to protect animals against infection by Salmonella,
CC especially those belonging to antigenic specificity group O:9, including
CC S. enteritidis, S. panama and S. dublin. A vaccine prepared using an

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CC   oligosaccharide from S. enteritidis can be used to provide protection
CC   against septicaemia caused by S. typhi and against typhoid fever, as well
CC   as to protect humans and animals from toxic infections and zoonosis
CC   caused by Salmonella of the same serogroup. The carrier proteins enhance
CC   the immunogenicity of the oligo- or polysaccharide antigens. Inclusion of
CC   additional Salmonella capsule antigens, such as the Vi antigen, increases
CC   the vaccine's efficacy against encapsulated bacteria. The present
CC   sequence, protein LP40, is a preferred example of a carrier protein which
CC   can be used in the immunocomplex. It is obtained by recombinant
CC   expression of a modified Kleb. pneumoniae I-145 P40 gene in E. coli
XX
SQ   Sequence 344 AA;

  Query Match             99.7%;  Score 1818;  DB 2;  Length 344;
  Best Local Similarity   99.7%;  Pred. No. 3e-157;
  Matches  343;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60

Qy         61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120

Qy        121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180

Qy        181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240

Qy        241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300

Qy        301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
              |||||||||||||||||||||||||||||||||||||||||| |
Db        301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPQG 344


RESULT 15
AAB67771
ID   AAB67771 standard; protein; 452 AA.
XX
AC   AAB67771;
XX
DT   11-JUN-2001  (first entry)
XX
DE   Amino acid sequence of a fusion protein of P40 and RSV antigen.

KW   Outer membrane protein A; OmpA; P40; enterobacteria; nasal composition;
KW   RSV; RSV infection; lung; respiratory tract; vaccine.
XX
OS   Synthetic.
OS   Klebsiella pneumoniae.
OS   Respiratory syncytial virus.
XX
PN   WO200121203-A1.
XX
PD   29-MAR-2001.
XX
PF   22-SEP-2000; 2000WO-FR002626.
XX
PR   23-SEP-1999;   99FR-00011888.
XX
PA   (FABR ) FABRE MEDICAMENT SA PIERRE.
XX
PI   Corvaiea N,  Goestch L;
XX
DR   WPI; 2001-257929/26.
DR   N-PSDB; AAF80153.
XX
PT   Vaccine against respiratory syncytial virus, comprises enterobacterial
PT   outer membrane protein and viral immunogen, provides protective response
PT   throughout the respiratory tract.
XX
PS   Example 2; Page 31-32; 39pp; French.
XX
CC   The present sequence represents a fusion protein comprising a Klebsiella
CC   pneumoniae outer membrane protein A (OmpA) designated P40 and a
CC   respiratory syncytial virus (RSV) antigen. Enterobacterium OmpA proteins,
CC   associated with an immunogenic peptide from RSV are used to prepare a
CC   nasal composition that induces a protective response, against RSV
CC   infection in the upper and lower (lung) respiratory tract. OmpA
CC   potentiates the immune response to some immunogenic peptides, eliminating
CC   the need for adjuvants. The method is useful for producing vaccines for
CC   prevention or treatment of RSV infections
XX
SQ   Sequence 452 AA;

  Query Match             99.7%;  Score 1818;  DB 4;  Length 452;
  Best Local Similarity   99.7%;  Pred. No. 4.4e-157;
  Matches  343;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MKAIFVLNAAPKDNTWYAGGKLGWSQYHDTGFYGNGFQNNNGPTRNDQLGAGAFGGYQVN 60

Qy         61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 PYLGFEMGYDWLGRMAYKGSVDNGAFKAQGVQLTAKLGYPITDDLDIYTRLGGMVWRADS 120

Qy        121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 KGNYASTGVSRSEHDTGVSPVFAGGVEWAVTRDIATRLEYQWVNNIGDAGTVGTRPDNGM 180

Qy        181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 LSLGVSYRFGQEDAAPVVAPAPAPAPEVATKHFTLKSDVLFNFNKATLKPEGQQALDQLY 240

Qy        241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 TQLSNMDPKDGSAVVLGYTDRIGSEAYNQQLSEKRAQSVVDYLVAKGIPAGKISARGMGE 300

Qy        301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPAG 344
              |||||||||||||||||||||||||||||||||||||||||| |
Db        301 SNPVTGNTCDNVKARAALIDCLAPDRRVEIEVKGYKEVVTQPQG 344


Search completed: January 19, 2005, 18:14:48
Job time : 85 secs
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